Amended claim 43 now depends from claim 30 instead of from claim 1. Applicants respectfully request that this objection be withdrawn.

Claims 30-31, 33, 37, 39-42 have been rejected under 35 USC § 103(a) as allegedly being unpatentable over Margrain (US 3,805,104) in view of W. Angele (US 3,209,187). Claim 32 has been rejected under 35 USC § 103(a) as allegedly being unpatentable over Margrain in view of W. Angele as applied to claim 31, and further in view of Lifschitz (US 3,698,079). Claims 34-36 have been rejected under 35 USC § 103(a) as allegedly being unpatentable over Margrain in view of W. Angele as applied to claim 33, and further in view of Karol (US 3,650,021). Claim 38 has been rejected under 35 USC § 103(a) as allegedly being unpatentable over Margrain in view of W. Angele as applied to claim 30, and further in view of Toshiba (JP 05328678A). Claims 43-46 have been rejected under 35 USC § 103(a) as allegedly being unpatentable over Margrain in view of W. Angele (US 3,209,187) as applied to claim 30, and further in view of Kliman (US 5,793,138). In view of the foregoing amendments, these rejections are moot.

Coreless motors are high performance motors. The rotor carries only an armature coil and a commutator; it has no iron core except for the shaft. The conventional coreless motor is generally constructed using either wire wound or printed circuit technology. In printed circuit applications, a conducting material is applied to a substrate by adhesives and etched from one side. The substrate is a solid structure which provides good support for the coil, but unfortunately produces a fairly thick armature with a low packing density. Packing density is defined as the electrical conductor to armature volume ratio. The low packing density is due to the volume of the substrate. W. Angele is an example of a printed circuit armature.

Applicants disclose a novel and unobvious coreless armature that optimizes the packing density with good structural support for the coil. This is achieved by using a pair of concentric conductive sheet metal windings separated by a thin isolator such as glass fiber strands or similar material. The thin isolator replaces the substrate used in conventional printed circuit applications, thereby increasing the packing density of the armature. To provide the structural support for motor applications, the armature is encapsulated with a material that extends all the way through the armature between the spaces of the two concentric coils.

In the previous Office action, the Patent Office relies primarily on Margrain in support of the rejections. According to the Patent Office, Margrain discloses an armature formed from a pair of concentric conductive sheet metal windings separated by an insulator and encapsulated in

a potting material. However, as correctly noted by the Patent Office, the insulator disclosed by Margrain is a solid structure which prevents the potting material from extending all the way through the armature between the spaces of the two concentric coils. Instead, the Patent Office contends that this feature is found in W. Angele arguing that it would have been obvious at the time the invention was made to encapsulate the coil disclosed by Margrain in the manner taught by W. Angele. Applicants respectfully disagree.

W. Angele is directed to a printed circuit armature. Using conventional techniques, electrical conductors are etched on both sides of an insulating base. An adhesive is used to join adjacent conductors on the inside and the outside of the armature. However, the adhesive does not extend all the way through the armature between the spaces of the two concentric coils. Indeed, this was acknowledged by the Examiner in a telephone interview on July 2, 2002. Yet, during that interview, the Examiner maintained the rejections arguing that the insulating base and the adhesive of W. Angele could both be an epoxy forming a layered composition of encapsulation material extending through the armature. Although Applicants believe that this layered composition does not result in an encapsulated armature, to expedite the prosecution of this application Applicants have amended the claims to clarify that the encapsulation material is not layered, but rather homogeneous. Independent claim 30 now recites, in part:

> a pair of concentric conductive sheet metal winding portions . . . the winding portions being encapsulated in a ***homogeneous*** material that extends from a space between two adjacent conductive bands of said one of the winding portions to a space between two adjacent conductive bands of the other winding portion.

(emphasis added). Accordingly, even if the armature of Margrain was modified with an epoxy insulator to carry the conductive coils with an epoxy adhesive between the coils consistent with the teachings of W. Angele, the proposed combination would still not yield the claimed invention.

Claim 31-46 are all dependent, either directly or indirectly, from claim 30, and therefore, include all the limitations of claim 30 by way of reference. Accordingly, the claims are also allowable for the same reasons set forth hereinbefore as well as the additional limitations recited therein.

In view of the foregoing amendments and remarks, it is respectfully submitted that this application is now in condition for allowance, and accordingly, reconsideration and allowance

are respectfully requested. Should any issues remain which the Examiner believes could be resolved in a telephone interview, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,

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